ATTACHMENT A

IN THE CLAIMS:

Listing of Claims:

1-23. (Canceled)

24. (Currently Amended) A method for manufacturing a microelectrophoresis chip, ~~said chip comprising a substrate having formed therein at least one separation channel for performing separation formed on a first major surface, at least two electrodes disposed within the channel to induce an electric field within the channel, a homogeneous separation medium comprising water soluble fullerences effective to act as obstacles to migration of biopolymers in a sample applied to the microelectrophoresis chip and in that the microelectrophoresis chip further comprises a detector element disposed on the chip for observation of migrating biopolymers, wherein the method comprises the steps of~~comprising:

(a) forming a mold using lithography, ~~said~~ the mold being the reverse of a desired pattern of one or more channels ~~and separators~~, each channel having a central region between two edges;

(b) casting or imprinting the channels in a polymeric substrate as a negative impression replica of the mold;

(c) fusing the polymeric substrate with the channels formed therein to a solid support;

(d) forming a plurality of ~~at least two~~ electrodes within each channel, wherein at least one cathode or anode~~; and~~ is disposed in the central region of a channel.

~~(e) filing each channel with a homogeneous separation medium.~~

25. (Currently Amended) The method for manufacturing a microelectrophoresis chip according to claim 24, wherein ~~the~~ each ~~separation~~ channel is from 1 to 10μm in depth.

26. (Currently Amended) The method for manufacturing a microelectrophoresis chip according to claim 24, wherein the chip has a plurality of ~~separation~~ channels.

27. (Canceled)

28. (Currently Amended) The method for manufacturing a microelectrophoresis chip according to claim 24, wherein the plurality of anodes and the plurality of cathodes are disposed to generate electric fields in at least two non-parallel directions.

29. (Currently Amended) A method for manufacturing a microelectrophoresis chip, ~~said chip comprising a substrate having formed therein at least one separation channel for performing separation formed on a first major surface, at least two electrodes disposed within the channel to induce an electric field within the channel, a homogeneous separation medium comprising self-assembling dendrimers effective to act as obstacles to migration of biopolymers in a sample applied to the microelectrophoresis chip and in that the microelectrophoresis chip further comprises a detector element disposed on the chip for observation of migrating biopolymers, wherein the method comprises the steps of~~comprising:

(a) forming a mold using lithography, ~~said~~ the mold being the reverse of a desired pattern of one or more channels ~~and separators~~, each channel having a central region between two edges;

(b) casting or imprinting the channels in a polymeric substrate with a first major surface as a negative impression replica of the mold;

(c) fusing the polymeric substrate with the channels formed therein to a solid support;

(d) forming a plurality of ~~at least two~~ electrodes within each channel, wherein at least some anodes or cathodes~~; and~~ are disposed in the central region of a channel such that the electrodes can generate electric fields in at least two non-parallel directions within a plane parallel to the first major surface of the substrate.

~~(e) filling each channel with a homogeneous separation medium.~~

30. (Currently Amended) The method for manufacturing a microelectrophoresis chip according to claim 29, wherein ~~the~~ each separation channel is from 1 to 10μm in depth.

31. (Currently Amended) The method for manufacturing a microelectrophoresis chip according to claim 29, wherein the chip has a plurality of separation channels.

32. (Canceled)

33. (Canceled)

34. (New) The method for manufacturing a microelectrophoresis chip according to claim 24, further comprising filing each channel with a homogeneous separation medium including water soluble fullerenes.

35. (New) The method for manufacturing a microelectrophoresis chip according to claim 24, further comprising filing each channel with a homogeneous separation medium including self-assembly dendrimers.

36. (New) The method for manufacturing a microelectrophoresis chip according to claim 29, further comprising filing each channel with a homogeneous separation medium including water soluble fullerenes.

37. (New) The method for manufacturing a microelectrophoresis chip according to claim 29, further comprising filing each channel with a homogeneous separation medium including self-assembly dendrimers.